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Current and Future Status of Chemistry Collections at ARL Institutions

Abstract

The process of consolidating science and technology branch libraries in academic institutions is not new, but with ease of access to electronic resources, shrinking budgets, and interdisciplinary research the norm, the idea of consolidation has become more attractive in the past decade. This article reports on the results of a 2005 survey of Association of Research Libraries (ARL) institutions and the status of their chemistry related library resources and facilities. The past, present, and future of these chemistry collections will be discussed with emphasis on those having consolidated in the last ten years or those who plan to consolidate in the next ten years. Reasons for consolidation will be discussed, as well as funding sources and characteristics of the physical facilities.

Introduction

Whether they are called “branch libraries,” “departmental libraries,” or even “organizational misfits” (Suozzi & Kerbel 1992), the value, economics, and fate of these entities at academic institutions have been discussed at length for decades (Dunlap 1976; Seal 1986; Shkolnik 1991). Some, such as Suozzi and Kerbel (1992) favor the idea of branch libraries that can be both flexible and entrepreneurial in nature, while others such as Lessin (2001) argue that similar characteristics can arise from a merger of departmental libraries. Crockett (2000) has even suggested that a compromise can exist by changing the focus of the branch library to a place where patrons with similar interests can gather to discuss, use various forms of technology, and obtain specialized help through subject-specialist librarians. Such branch libraries would require less space as most research materials would be virtual, but these libraries would still remain a vital, embedded part of the academic department(s) they serve.

Guidelines for branch libraries at academic institutions have been created (Association of College and Research Libraries 1991) and Madison et. al. (1994) have developed a methodology for using these guidelines for reviewing branch libraries. Suggested criteria for the consolidation of branch libraries have also been published. For example, some of Byrne et. al.’s criteria influenced the survey instrument by providing areas for targeted questions:

- Reduce expenditures or enhance services, and avoid further erosion of service quality which results from stretching reduced staff across a greater number of libraries.
- Create a rational combined collection with intellectual affinity.
- Provide appropriate quality and quantity of space to accommodate the combined collections.
- Complement or be compatible with long-term strategic plans for the library and for academic, strategic, and long-range plans for the campus and the university. (Byrne et. al. 1994)

Even with guidelines, standards, and methodologies, it often boils down to local politics, economics, and management styles on whether branch libraries will continue to exist, merge with other libraries, or close altogether. Because of these various factors and considerations, some institutions came to the conclusion of consolidation very recently, while others finished their consolidation decades ago.

The University of Florida's Marston Science Library opened in 1987, replacing four branch libraries. Though this move was accomplished nearly twenty years ago, it was acknowledged that the concept of branch library closures had been considered twenty years prior to that date (Battiste et. al. 1989). The last ten years has seen a number of published reports of merging and consolidation of science and technology branch libraries, in particular chemistry libraries. Some detail the specifics of the move (Calderhead 1996a; Johnson et. al. 2004), others report on the reasons for consolidation (Davidson 1992; Twiss-Brooks 2005), while others give an overview of the whole consolidation process (Armstrong 2005).

With all the apparent merging of science libraries in the news, and with the potential for consolidating libraries at Purdue University, the Purdue Libraries wanted to obtain a more rigorous picture of the climate for consolidation. Thus, a survey of ARL institutions was created, focusing on the fate of chemistry libraries.

Background

Currently there are fourteen libraries, including a dedicated Chemistry Library, on the West Lafayette campus of Purdue University. While there are larger libraries such as the Undergraduate Library and the Humanities, Social Sciences and Education Library, the science and engineering libraries still remain scattered across campus, most situated within the buildings of the departments they serve. With the arrival of a new Dean of Libraries, Dr. James Mullins, in June 2004, the Purdue University Libraries began setting its sights on new directions and services. Shortly after his arrival, Purdue began exploring the possibility of combining three Physical Sciences libraries (Chemistry, Earth and Atmospheric Sciences, and Physics) with the Engineering Library into one facility, and also combining the Life Sciences, Veterinary Medical, and Pharmacy, Nursing and Health Sciences libraries into a combined library facility. Over the past three years, steps were taken to administratively create this structure by creating the Division of Physical Sciences, Engineering, and Technology and the Division of Health and Life Sciences, without physically combining the libraries at that time. Poland (1999) has detailed a similar situation of administratively consolidating science branch libraries while maintaining their individual locations at Cornell University.

Since the reaction to the suggestion of combining libraries has traditionally been mixed within the Purdue community, it was seen as important to determine what other ARL institutions were doing in terms of possible reorganization or consolidation. Of specific interest to the author was data on the current and possible future status of chemistry collections across ARL institutions. The data could then be used to disseminate to interested parties within Purdue to further dialogue on the potential combining of the physical sciences and engineering libraries. The importance of faculty, student, and staff buy-in has not been lost on those who have consolidated in the past (Calderhead 1996b).

Design and Implementation of the Survey

The survey was constructed in a decision tree manner in order to gather the information desired in the most efficient fashion. (See Appendix A for full survey.) Questions focused on the physical status of chemistry libraries, dates of consolidation, reasons and funding sources for consolidation, and related subjects housed with the chemistry collection. Additional questions about the administrative structure were also asked. The questions on administration were based on similar questions asked on a survey of ARL academic science and technology libraries that was published in two separate papers in 1991 (Brekke et. al.; Roberts et. al.). Hurd has since published a follow-up study (1996).

The surveys were mailed in May 2005 to the library directors of 113 ARL institutions, which included all Canadian and American academic members of ARL. Dean Mullins alerted the directors to the survey at a meeting of ARL Directors a week later. In mid-June 2005, a reminder was emailed to each of the directors that had not responded. The same survey was attached electronically to the email in hopes of soliciting further feedback.

Current Status of Chemistry Libraries and Chemistry Collections

The rate of return was 78% (88 institutions). Currently, the status of chemistry collections within these 88 institutions is as follows:

- 24% have separate chemistry libraries (21 institutions)
- 40% have their chemistry collection housed in a central **sci/tech** library with:
 - 18 institutions having **no** other sci/tech libraries present at the institution
 - 5 having additional sci/tech libraries **independent** of the central sci/tech library
 - 7 having additional sci/tech libraries that **report** to the central sci/tech library
 - 5 having additional **reporting and independent** sci/tech libraries present
- 25% have their chemistry collection housed in a **main** library with:
 - 10 institutions having **no** other sci/tech libraries present
 - 10 having other sci/tech libraries present
 - 2 having the chemistry collection physically **separated** within that library
- 11% “Other” – Of the 10 institutions, half have combination libraries: consisting of 1 Chemistry/Math library, 1 Chemistry/Biology library, and 3 Chemistry/Physics libraries

Of the 88 institutions responding, 53% (47 institutions) currently have or had a chemistry library at some point within their institution's history. However, as stated previously, only 24% (21 institutions) have a chemistry library that currently exists. Of the 26 chemistry libraries that have ceased to exist, 6 have done so within the past ten years. Conversely, when asked about potential consolidation of the chemistry library within the next ten years, 8 out of the 21 institutions indicated they would be pursuing some form of consolidation or closure. Another 3 out of the 21 suggested they would be reducing the space of their chemistry library significantly within the next ten years. This indicates that by 2015, roughly half of the current chemistry libraries in ARL institutions may no longer exist as separate entities.

Administration of ARL Chemistry Libraries and Collections

The reporting line of the 21 chemistry libraries surveyed is given in Table 1. The reporting structure of the libraries indicating consolidation in the next ten years is also given as well as the percentage of all chemistry libraries. The data indicates that more than half of those that report to a science/technology library coordinator may consolidate in the next ten years. This agrees with the phenomenon reported that consolidations often involve more than one library, particularly groups of science and technology libraries consolidating into one entity.

TABLE 1: Reporting Line of ARL Chemistry Libraries

Reporting to	# of all chemistry libraries (n=21)	# of those consolidating in next 10 years (n=8)	Percent of those consolidating
Central library administration	13	4	31%
Science/technology coordinator	7	4	57%
Academic Department	1	0	0%

A staffing breakdown of the 21 chemistry libraries is given in Table 2, though one institution chose not to answer the question. Looking at the average staffing levels in the 8 chemistry libraries that plan to consolidate indicates a slightly lower staffing level on average when compared to all chemistry libraries as a whole.

TABLE 2: Staffing in ARL Chemistry Libraries

Staff	Average # at all chemistry libraries (n=20)	Average # at those consolidating in next 10 years (n=8)
FTE of professional staff/librarians	1.05	0.94
FTE of paraprofessionals/clerical	1.39	1.28

FTE of students	2.05	1.58
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Looking at the 67 institutions without chemistry libraries, data was also collected on what other science, technology, and engineering subject collections are housed in the same facility as the chemistry collection. The subjects with the most pairings are given in Tables 3. The top anticipated subject pairings for those consolidating within the next ten years correlate with the current pairings. While the rankings are not identical, the top six subjects are the same for each group of institutions.

**TABLE 3: Science and Technology Subjects
Most Likely Housed with Chemistry Collection**

Subject	# of Institutions (n=67)	# of Institutions consolidating in next 10 years (n=8)
Physics	60	7
Astronomy	54	6
Biology/Life Sciences	53	6
Earth Sciences	53	8
Environmental Sciences	52	7
Mathematics/Statistics	50	6

Reasons for Consolidation

Respondents were given 18 choices for reasons for consolidation as well as the opportunity to provide additional reasons. Reasons for consolidation from the 6 institutions that have done so in the last ten years are given in Table 4. Only those reasons with two or more responses are given.

TABLE 4: Reasons for Past Consolidation

Reason for Consolidation	# of Institutions (n=6)
To improve efficiency within the libraries	4
Increased interdisciplinary research on campus	4
To reduce staffing costs	3
Insufficient staff to maintain chemistry library	3
To increase space for chemistry collection	3

Chemistry department needed the space	2
To be able to offer new services	2
To increase hours of service	2
Best way to upgrade technology	2
Reorganization of administration/library structure	2

Similarly, reasons for consolidation for those considering it in the next ten years are given in Table 5. Again, only those reasons with two or more responses are given. One institution indicating future consolidation chose not to answer this question.

TABLE 5: Reasons for Future Consolidation

Reason for Consolidation	# of Institutions (n=7)
To be able to offer new services	5
Increased interdisciplinary research on campus	5
To increase hours of service	4
To improve efficiency within the libraries	4
To reduce staffing costs	3
Decline in on-site usage of the chemistry library	2
Best way to upgrade technology	2
To improve visibility on campus	2
Changes to the library's/libraries' mission	2

While the number of responses is not large, some similarities and differences in the reasoning can be observed. Those that consolidated their chemistry libraries in the past ten years indicated “To increase space for chemistry collection” as a reason for consolidation (3 institutions). This reason was not chosen for any of those exploring future consolidation. This is most likely due to the increasing use of online resources and that some institutions are planning for high-density and/or off-site storage in conjunction with their future consolidation. The only unique reason given by future consolidations was “Changes to the library’s/libraries’ mission” (2 institutions). This may indicate that the strategic planning process now undertaken at many institutions is also influencing the decision to consolidate.

When looking at both groups together, there were three reasons for consolidation that more than half (7 institutions) selected. These were “Increased interdisciplinary research on campus,” “To improve efficiency within the libraries,” and “To be able to offer new services.” No institution,

whether indicating consolidation in the future or the past, chose the reasons “To increase usage of the chemistry collection” or “To decrease the size of the chemistry collection.”

Funding for Consolidation

Though not all respondents chose to answer the question of funding, most of the answers indicated that consolidations were or will be funded by government monies and/or private donors. (See Table 6.)

TABLE 6: Sources of Funding for Consolidation

Source of Funding	Consolidation in Last 10 Years (n = 4)	Consolidating in Next 10 Years (n = 5)	Combined (n = 9)
No funding	1	0	1
Bonds	1	1	2
Endowments	0	0	0
Private Donors	3	2	5
Corporate Donors	2	1	3
Government	2	2	4
Other*	0	2	2

* Other included “unsure, hasn’t been discussed” and “funding plans remain to be determined.”

Consolidated Facilities

Where the chemistry collection ends up in a consolidated library environment was mixed. Those who consolidated in the last ten years reported the following situations for their chemistry collections:

- 1 was consolidated into a new building
 - 1 into a new combined sci/tech library
- 3 were consolidated into an existing building as it existed
 - 2 into a central/main library
 - 1 into a sci/tech library
- 2 were consolidated into an existing building with additional renovation/expansion
 - 1 into a renovated sci/tech library
 - 1 into a renovated central/main library, but still physically separated

Those indicating a planned consolidation in the next ten years gave the following most likely scenarios:

- 5 will be consolidated into a new building
 - 4 into a new combined sci/tech library
 - 1 into a new combined chemistry/geoscience library
- 2 will be consolidated into an existing building as it exists
 - 1 into a central/main library
 - 1 into a sci/tech library
- 1 will be consolidated into an existing building with additional renovation/expansion
 - 1 into a renovated sci/tech library

The major difference between the two groups is that more new construction is planned for chemistry and similar collections over the next ten years as compared to the previous ten years.

Lessons Learned

Additional comments were solicited about the consolidation process, such as pitfalls, positive outcomes, faculty and student reactions, and any other insights before, during, or after the consolidation process. Most of the comments received were positive. Some of the benefits of consolidation included:

- Consolidated journal runs from among various libraries
- The library could now be open “110 hrs vs. 40 hrs + keys,” referring to the practice of having minimal hours of operation and then allowing after-hours access to certain patron groups
- Access and Technical Services policies, roles, and staff can be shared and standardized
- After the consolidation process gets under way, the Chemistry department may want to take over some of the library space right away, but moving in stages instead of all at once can be a good thing
- New services offered/considered: Internal book and article delivery service, transitional office hours within the department while the new library is constructed, creating an improved web presence, and having a rotating new book shelf within each academic department.

A number of institutions mentioned the importance of keeping library staff, especially support staff involved and informed throughout the consolidation process. After the consolidation, training staff from disparate libraries on how to work within the same environment is just as important (Primack & Battiste, 1989).

Conclusions

The results of this survey indicate that indeed the consolidation of chemistry libraries at ARL institutions is happening and will continue to happen over the course of the next ten years. Nearly half of the chemistry libraries at ARL institutions may close within the next decade. Increased interdisciplinary research, coupled with the desire to make library systems more

efficient and innovative drives this shift toward consolidation. These reasons not only drive the decision to consolidate, but also the methods of consolidation.

With 5 out of 8 chemistry libraries being incorporated into new facilities over the next ten years, this is a change from past practice. New buildings are better equipped to handle the latest technologies and adapt to new space considerations and services. Chemistry collections will most likely be placed in facilities with the other sciences, particularly the physical sciences including physics, earth sciences, and mathematics/statistics. However, collections in the life sciences and environmental sciences seem to be just as likely a pairing with the chemistry collection. Additional indicators for potential consolidation include lower than average staffing levels and those libraries that report to a science/technology coordinator instead of a central library, further emphasizing the desire for efficiency and economy.

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